

Please add the following new claims:

15. (New) An interferometric measuring device for measuring a shape of a surface of an object, comprising:

a radiation source that emits a short-coherent radiation;

12 a beam splitter for forming an object beam which is directed via an object light path to the object, and a reference beam which is directed via a reference light path to a reflective reference plane;

an image converter for detecting a radiation reflected back by the surface and the reference plane and brought to interference, and for transmitting the radiation;

an analyzing device for receiving the radiation transmitted from the image converter and for determining a measuring result pertaining to the surface, wherein an optical length of the object light path is altered relative to an optical length of the reference light path to perform a measurement; and

a superposition optics positioned in the object light path and including one of multifocal optics and a free segment optics having imaging elements, the superposition optics creating an image simultaneously other than of the surface, of at least one additional surface, the image of the at least one additional surface and the image of the surface being imaged on the image converter one of directly and via at least one intermediate image in the object light path, wherein a measurement of the surface and a measurement of the at least one additional surface occurs accompanied by a relative change in the optical length of the object light path as compared to the optical length of the reference light path.

16. (New) The interferometric measuring device according to claim 15, wherein the free segment optics accommodates the surface and the at least one additional surface orientated at an angle to each other.

17. (New) The interferometric measuring device according to claim 15, wherein the object light path generates a common intermediate image of the surface and an intermediate image of the at least one additional surface in a common intermediate image plane in the object light path, and the common intermediate image is imaged one of directly on the image converter and via the at least one intermediate image.

18. (New) The interferometric measuring device according to claim 17, wherein a scanning of the common intermediate image is performed.

19. (New) The interferometric measuring device according to claim 15, further comprising:

an endoscope serving as the object light path.

20. (New) The interferometric measuring device according to claim 15, further comprising one of:

an optical fiber for illuminating the object with a planar wave and including an output situated at an object end in a telecentric image arrangement of the object light path; and

an illumination light path formed with additional lenses and deflector elements.

21. (New) The interferometric measuring device according to claim 15, further comprising:

optics positioned in the reference light path similar to those of the object light path.

22. (New) The interferometric measuring device according to claim 15, further comprising:

optics positioned in the reference light path identical to those of the object light path.

23. (New) The interferometric measuring device according to claim 15, further comprising:

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an optics rigid with respect to the object positioned in the object light path;
and

an optics following the rigid optics and being movable in a direction of an optical axis thereof.

24. (New) The interferometric measuring device according to claim 23, wherein the rigid optics are part of the superposition optics.

25. (New) The interferometric measuring device according to claim 24, wherein the rigid optics image toward infinity.

26. (New) An interferometric measuring device for measuring a shape of a surface of an object, comprising:

a radiation source that emits a short-coherent radiation;

a beam splitter for forming an object beam which is directed via an object light path to the object, and a reference beam which is directed via a reference light path to a reflective reference plane;

an image converter for detecting a radiation reflected back by the surface and the reference plane and brought to interference, and for transmitting the radiation;

an analyzing device for receiving the radiation transmitted from the image converter and for determining a measuring result pertaining to the surface wherein an optical length of the object light path is altered relative to an optical length of the reference light path to perform a measurement; and

an imaging optics arranged in the object light path and for providing a depth of focus of at least an optical path difference of the surface and another surface, the imaging optics simultaneously creating an image other than that of the surface, of at least one further parallel surface arranged one of in front of, behind, configured at an angle and at right angles via optical deflecting elements, the image of the at least one further parallel surface being imaged on the image converter via at least one intermediate image in the object light path, a measurement of the surface and of the at least one further parallel surface occurring through a relative change in the optical length of the object light path, as compared to the optical length of the reference light path.

27. (New) The interferometric measuring device according to claim 26, wherein the object light path generates a common intermediate image of the surface and an intermediate image of the at least one additional surface in a common intermediate image plane in the object light path, and the common intermediate image is imaged one of directly on the image converter and via the at least one intermediate image.

28. (New) The interferometric measuring device according to claim 26, wherein a scanning of the common intermediate image is performed.

29. (New) The interferometric measuring device according to claim 26, further comprising:

an endoscope serving as the object light path.

30. (New) The interferometric measuring device according to claim 26, further comprising one of:

an optical fiber for illuminating the object with a planar wave and including an output situated at an object and in a telecentric image arrangement of the object light path; and

an illumination light path formed with additional lenses and deflector elements.

31. (New) The interferometric measuring device according to claim 26, further comprising:

optics positioned in the reference light path similar to those of the object light path.

32. (New) The interferometric measuring device according to claim 26, further comprising:

optics positioned in the reference light path identical to those of the object light path.

33. (New) The interferometric measuring device according to claim 26, further comprising:

an optics rigid with respect to the object positioned in the object light path to form a rigid optics; and

an optics following the rigid optics and being movable in a direction of an optical axis thereof.

34. (New) The interferometric measuring device according to claim 33, wherein the rigid optics are part of a superposition optics.

35. (New) The interferometric measuring device according to claim 34, wherein the rigid optics image toward infinity.